

THE DEVELOPMENT OF STANDARDIZED PROCEDURES FOR
PERSONNEL SAFETY IN ACCORDANCE WITH THE OSHA
"TWO-IN/TWO-OUT" RULE FOR THE CITY OF DELTONA,
FLORIDA

EXECUTIVE LEADERSHIP

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ABSTRACT

Often claimed as the most dangerous career, interior structural fire fighting presents dynamic and constantly changing situations where highly trained personnel must work in the extremes of heat and toxic atmospheres. Over the years there has been a constant debate over the number of personnel assigned to these duties and who should set these requirements. The purpose of this research was to determine what standards have been established, and how best to implement these standards for the Deltona, Florida, Fire Department.

A descriptive research methodology was used to assess the federal and state requirements for safe operations during interior structural fire fighting. The following questions were asked:

1. What State of Florida regulations or national standards exist regarding manpower during interior structural fire fighting operations?
2. What functions must fire fighters perform prior to interior operations, which can be accomplished

- safely without four personnel, and while waiting for the required number of fire fighters?
3. How have other agencies reacted to the OSHA requirements for "Two-in/Two-out"?
 4. What are other fire departments doing and how are they addressing the "Two-in/Two-out" rule?
 5. What procedures must be developed for the Deltona Fire Department to operate safely within the guidelines of "Two-in/Two-out"?

After reviewing the OSHA standards, state and federal requirements, and other nationally recognized consensus standards, the Deltona Fire Department has developed a 2-fold process for the implementation of a safer work place for the fire fighters of Deltona.

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INTRODUCTION

Interior structural fire fighting continues to be an extremely dangerous occupation. In an effort to minimize these dangers and provide a safer working environment for fire fighters, new standards have been adopted which specify the number of personnel needed to perform these duties. The purpose of this research project was to determine what requirements exist and how to meet these needs in the best way possible for the Deltona Fire Department.

A descriptive research methodology was used to assess the federal and state requirements for safe operations during interior structural fire fighting. This information was obtained through the use of literary sources and fire department surveys. The following questions were asked:

1. What State of Florida regulations or national standards exist regarding manpower during interior structural fire fighting operations?
2. What functions must fire fighters perform prior to interior operations, which can be accomplished

- safely without four personnel, and while waiting for the required number of fire fighters?
3. How have other agencies reacted to the OSHA requirements for "Two-in/Two-out"?
 4. What are other fire departments doing and how are they addressing the "Two-in/Two-out" rule?
 5. What procedures must be developed for the Deltona Fire Department to operate safely within the guidelines of "Two-in/Two-out"?

BACKGROUND AND SIGNIFICANCE

In 1971, the United States Department of Labor, Occupational Safety and Health Administration (OSHA) adopted a respiratory protection standard requiring employers to establish and maintain a respiratory protection program for their respirator-wearing employees. Since early 1994 the International Association of Fire Fighters (IAFF) has been working with OSHA on an official interpretation regarding the use of self-contained breathing apparatus and safe fire ground operations. For many years there had been numerous interpretations of the requirements contained in the OSHA standards.

On December 15, 1997 the Standard for Respiratory Protection was signed as an OSHA regulation. The revised OSHA respiratory protection standard was released by the Department of Labor and published in the Federal Register on January 8, 1998. It is effective on April 8, 1998 for OSHA states and federal employees. Non-OSHA states have six months from the release date to implement and enforce the new regulations. Al Whitehead, president of the IAFF has hailed this rule as "...the most significant advance in firefighters safety in this decade...it will save firefighters' lives this decade and for years to come" (Bruno, 1998).

This new standard strengthens some requirements and eliminates duplicative requirements in other OSHA health standards. The standard specifically addresses the use of respirators in immediately dangerous to life or health (IDLH) atmospheres, including interior structural fire fighting. The standard defines structures that are involved in fire beyond the incipient stage as IDLH atmospheres. OSHA further defines an incipient stage fire as a fire which is in the initial or beginning stage and which can be controlled or extinguished by portable

fire extinguishers, Class II standpipe or small hose systems without the need for protective clothing or breathing apparatus. Any structural fire beyond the incipient stage is considered to be an IDLH atmosphere (OSHA, 1998).

In these atmospheres, OSHA requires that personnel use self-contained breathing apparatus (SCBA). They further require that a minimum of two fire fighters work as a team inside the structure, and that a minimum of two fire fighters be on standby outside the structure to provide assistance or to perform rescue of injured or trapped fire fighters.

Although Florida is not an OSHA state, the Florida Department of Labor & Employment Security, Division of Safety is the safety-regulating agency in Florida for safety rules applying to employees. The Division of Safety rules are adopted as Florida Administrative Code and usually framed after Federal OSHA regulations.

In 1993 the Florida Division of Safety adopted rule 38I-20.003, Florida Administrative Code. This rule incorporated the Federal OSHA Standard 29 C.F.R. 1910 as published on July 1, 1993. This rule

only applied to public employees. This rule conflicted with NFPA 1500 standard and further complicated the issue by not providing a clear definition of how many fire fighters were required to safely operate at a structure fire.

After years of debate and political pressure Federal OSHA adopted a new respiratory protection standard. This standard had specific procedures for fighting interior structure fires, which included the requirement that the employer ensure that "at least two employees enter the IDLH atmosphere" (29CFR1910.134(g) and that two additional fire fighters be available outside to perform immediate rescue should the interior team become injured or trapped. To date this rule has not been adopted by the Florida Division of Safety.

This research specifically relates to the Executive Leadership course, Unit 7, Assessing Organizational Culture. As part of the change needed to implement a new safety standard, a real behavioral analysis and change was needed in the firefighters. We must study and adjust the behavioral culture of the fire service and in fact the tradition of how we perform our duties.

LITERATURE REVIEW

Literature was reviewed to determine what standards are in effect that regulate the City of Deltona and the State of Florida. Sources included the U.S. Department of Labor, State and Federal laws, the National Fire Protection Association (NFPA), the International Association of Fire Fighters (IAFF), the International Association of Fire Chiefs (IAFC), and emergency service journals.

During my review of current literature I found that NFPA 1500 Fire Department Occupational Safety and Health 1992 Edition had been amended. The NFPA's membership consists of fire chiefs, fire fighters, fire protection specialists, engineers, industry representatives and other interested individuals. The NFPA has separate committees which establish new standards and revise existing standards as needed. The Fire Service Occupational Safety and Health Committee reviewed the 1992 edition of NFPA 1500 and submitted a revision to the Standards Council. On July 23, 1993 the Standards Council issued the Tentative Interim Amendment (TIA) with an effective date of August 20, 1993. In this

TIA a working structure fire was defined as "Any fire that requires the use of 1½-inch or larger fire attack hose lines and that also requires the use of self-contained breathing apparatus for members entering the hazardous area" (NFPA, 1993). A new Section 6-4.1.1 was added which stated that

6-4.1.1 At least four members shall be assembled before initiating interior fire fighting operations at a working structure fire. All fire fighting operations shall be conducted in accordance with 6-4.3 and 6-4.4. Exception: If, upon arrival at the scene, members find an imminent life-threatening situation where immediate action may prevent the loss of life or serious injury, such action shall be permitted with less than four persons on the scene, when conducted in accordance with the provisions of Section 6-2 (NFPA, 1993).

The assembling of four members for the initial attack can be accomplished in several ways. The NFPA recommended that each fire department should determine its own best way in which it plans to assemble members. The four members assembled for initial interior operations can include any

combination of members arriving separately at the incident. Members who arrive on the scene of a working structural fire prior to the assembling of four persons may perform a number of exterior actions in preparation for an interior attack. These duties may include, but are not limited to, actions such as the establishment of a water supply, the shutting off of utilities, the placement of ladders, the laying of the attack line to the entrance of the structure, or protecting exposures.

If members are going to initiate actions that would involve the entering of a structure because of an imminent life-threatening situation where immediate action may prevent the loss of life or serious injury, and four members are not yet on the scene, the member should carefully evaluate the level of risk that they would be exposed to by taking such actions. If it is so determined that the situation warrants such action, other responding companies must be notified so that they will be prepared to provide necessary support and backup upon their arrival (NFPA, 1993).

This action is intended to be an exception to the rule and apply only to those rare and

extraordinary circumstances when, in the member's professional judgement, the specific instance requires immediate action to prevent the loss of life or serious injury and four persons have not yet arrived on the fireground (NFPA, 1993).

The NFPA standards are consensus standards and not mandated by any agency. However, failure to follow these standards as established by nationally recognized fire service leaders has long been thought to be detrimental to any court proceedings involving injuries or death. The standard further went on to require that interior fire fighting must be done in teams of 2 or more, and that these personnel must remain in contact with each other by either visual, audible, or physical contact so that they could provide assistance to each other if needed (NFPA, 1993). Another requirement stated that when 2 or more fire fighters were operating inside a structure that 2 persons must be immediately available outside the structure to assist in rescue should the fire fighters become trapped or injured (NFPA, 1993).

In a nation wide survey by Fire Chief in July 1998 one thousand surveys were faxed to their

subscribers. "Of the 1,000 faxes, 748 went through. By the end of July, we'd received a total of 189 surveys back, which gave us an excellent response rate of 25.3%" (Baltic, 1998, 48). The survey asked if the respondent's department was in an OSHA state or if they operated under a state plan. It requested information regarding the number of personnel in the department, and if staffing changes were made this year or planned for next year. The respondents were also asked to comment on issues such as costs and political concerns regarding the new OSHA "Two-in/Two-out" rule.

Comments by the Chiefs ranged from very positive to extremely negative. Positive comments consisted of remarks such as "it's about time we put safety ahead of bravado" and "Best thing to happen in years to the fire service" (Baltic, 1998, 44). Other comments were more negative such as "It's not Washington's job to dictate how firefighter's job is to be done" and "Municipalities are not going to hire adequate personnel due to this rule" (Baltic, 1998, 44). However, many agencies stated that this was no big deal and other agencies had been doing this for years. Nearly 60% of those responding

advised that they were changing policies to implement the new rule. Other agencies suggested different ways of adapting to the new requirements. Some smaller agencies are concerned that delays while assembling 4 person crews will result in larger and more dangerous fires instead of controlling the fires in their smaller stages. Some chiefs raised a different point when discussing the fact that when fire fighters cannot enter a burning building because of a lack of manpower what will the public do? Will they try to fight the fire, or get back inside to save property? This could be even more dangerous to the fire fighter. Another idea is how will this affect the fire fighter and the stress level of having to stay outside a building and wait for what will seem like an eternity while other personnel respond (Baltic, 1998).

One of the major aspects of this new rule is the required training that all personnel must attend. This training must identify exactly what fire fighters can and cannot do on fire scenes, as well as the need for this type of policy. They must be made to understand once and for all that saving

property is not worth an injury or the life of anyone (Edwards, 1998).

The fact is, firefighters face various degrees of risk every time they answer an alarm. The nature and level of that risk can vary greatly depending on many factors. "A rapid intervention team staged and ready to spring into action, will reduce the risk" (Murgallis, 1998).

In April 1998 the International Society of Fire Service Instructors (ISFSI) issued a special four part Instruct-o-Gram which provided classroom and practical training for personnel on the procedures of a Rapid Intervention Team, and the OSHA "Two-in/Two-out" rule (ISFSI, 1998). These guides cover all of the information fire fighting personnel need to meet the OSHA training requirements.

PROCEDURES

This research project began by reviewing fire, EMS, and civilian literature from across the country. Although the research covered national publications, the final product had to be confined to meet the requirements of Florida Statutes and the

Florida Department of Labor & Employment Security,
Division of Safety regulations.

The State of Florida has 68 counties with approximately 500 paid, combination, or volunteer fire departments and an estimated 26,000 paid and volunteer firefighters.

A survey was conducted using a list of 214 fire departments in the State of Florida. The list of departments surveyed represents agencies where the Chief or other senior officer is a member of the Florida Fire Chiefs Association without regard for career, volunteer, or combination department status (see Appendix B). The survey, which was mailed to each Fire Chief, requested information on the department, if they have a policy on "Two-in/Two-out", how they utilize their personnel, and if they have agreements with other agencies. A copy of their current policy on "Two-in/Two-out" was requested. All information was requested to be faxed to this writer.

RESULTS

A total of 93 agencies returned the survey with some attaching additional information representing department policy or procedure. The survey results indicated that as of the beginning of October 1998 only 44 percent of the respondents have a policy on "Two-in/Two-out". If this figure were carried out to cover all fire departments in the state of Florida, over 250 agencies still need a policy to protect their fire fighters. Nationally this figure would be in the tens of thousands.

The fire departments surveyed ranged in size from less than 20 to over 1500 members. The 93 departments replying to the survey protect populations ranging from 1,000 to over 754,000 people. The area they cover ranges from one to 840 square miles.

Of the 93 survey respondents only six agencies reported minimum manning levels for a fire engine of one person. Some of these agencies were rural countywide departments while others were small towns or fire districts. Thirty agencies or 32 percent reported minimum manning levels of two per engine.

Only 46 agencies or 49 percent reported minimum levels of three per engine while manning levels of four were reported by just eight agencies. Only one of the 93 respondents reported minimum manning of five per engine.

When questioned about the use of inter local agreements to assist in these manpower needs only 27 agencies or 29 percent reported that they had some type of agreement with a neighboring department.

In attempting to develop a policy for the Deltona Fire Department consideration was given to the use of engineers or apparatus operators as part of the 4 member crews. Only 36 agencies or 38 percent allow these individuals to leave their unit for interior operations. However, 43 agencies or 46 percent of the departments allow the engineer to function as part of the rapid intervention team if there were an emergency while firefighters are working inside a structure.

DISCUSSION

After reviewing the documents it was apparent that the Deltona Fire Department should establish

new procedures which will provide manpower to comply with the "Two-in/Two-out" rule. Although not mandated by Florida Law, progressive fire service managers must do everything they can to make their communities the safest possible. This includes not only the residents we protect but also the people we hire.

The City of Deltona is a planned unit development, which is mostly residential and currently consists of approximately 20,000 homes and approximately 500 businesses. The current population is 59,711 and the total area is approximately 46 square miles. The department operates four stations each with one ALS engine. Average manpower consists of two or three per truck. The standard response to structure fires is three engines with a minimum manpower of eight and an Operations Commander as the Incident Commander. Previous policy required the first due unit to report to the scene while the second and third due standby at the nearest available water supply. This was due to the lack of available water supply close to most structures. In order to implement the new

safety policy additional personnel were needed at the scene.

In order to increase the manpower to provide four personnel per truck, the City would need to hire seven additional personnel per shift or a total of 21 new employees. The cost of these additional personnel would exceed \$500,000. per year. This would be an increase of over 30 percent to the current budget. Rather than look to the City Commission for additional funds on an already limited budget, other ways had to be found to provide the same level of safety.

Another way to obtain the same results was to improve other aspects of our fire protection, which would allow better use of the current personnel. After consideration of all the factors, we determined that a better water supply system would assist in this matter at a substantial cost reduction to the City. A hydrant installation program was implemented installing 500 additional fire hydrants into the City. The hydrant program would provide a fire hydrant within 1,000 feet of all residential properties and within 300 feet of all commercial properties. This allowed both the

first due and second due engines to respond directly to the fire scene and begin interior operations and if a water supply was needed, this could be supplied by the third engine through the use of large diameter hose.

Purchasing and installing the 500 hydrants will cost the City approximately \$500,000. This will be financed over several years to reduce the annual impact and eliminate the need for hiring extra personnel. Annual personnel increases will continue based on growth and available funding, but the hydrant program enables the City to purchase capital items, which are only paid for once, instead of hiring personnel who are on the payroll for the next 20 years. The net effect is a savings to the City of hundreds of thousands of dollars each year. Residents and business owners will also see an added benefit of reduced ISO ratings and insurance savings due to the improved water supply. Another benefit the fire fighters see is a faster water supply being delivered to the scene and faster and easier pick up after the alarm. Prior to installing the hydrants a typical lay during a structure fire was 2,000 feet with many being even longer. These longer lays

required relay pumping or tanker shuttles. Both of which were manpower intensive.

RECOMMENDATIONS

Although there is a mandate by some state and Federal OSHA for each fire department to implement a "Two-in/Two-out" policy, each community must determine the best way to accomplish this task. Each community should determine, through a political process, how structure fires are handled, acceptable response times, and total manpower each department should have. The local governing board is not allowed to determine the minimum number of personnel that are recognized to keep fire fighters safe at an emergency. The "Two-in/Two-out" rule does not direct the number of fire fighters needed on an apparatus or on duty. It does address the number and functions of fire fighters at the scene of an emergency that are needed to safely initiate an interior attack of a structure fire. Each department must go through a systematic process of assessment, training, development, and evaluation to

determine the best course of action in implementing these new policies.

Through a combination of training, better resource allocation, and prudent funding, the City of Deltona has fulfilled the requirements of the "Two-in/Two-out" rule. At the same time we have provided a safer work place for our employees, and made the City of Deltona a better place to live and work by providing a higher level of fire protection to all of our residents at the lowest possible cost.

REFERENCES

- Baltic, Scott (1998, September). Three to get ready, four to go. Fire Chief, 44-50.
- Bruno, Hal (1998, February). OSHA mandates "2-in/2-out" operations. Firehouse, 10.
- Edwards, Steven T. (1998, March). Training for two-in/two-out. Fire Chief, 42-46.
- Joint Legislative Management Committee. (1995). Florida Statutes. Tallahassee, FL
- Murgallis, Robert (1998, March). Rapid intervention crews rescue the rescuers. American Fire Journal, 24-25.
- National Fire Protection Association. (1993). NFPA 1500 TIA 92-1: Fire Department Occupational Safety and Health. (1992 Edition). Quincy, MA
- Occupational Safety and Health Administration. (1998). Title 29 CFR 1910.134: Standard for Respiratory Protection. Washington, DC

APPENDIX A

SURVEY FORM

Executive Fire Officer Program
OSHA Two-in/Two-out

1. Fire Department Size:

a) Number of Combat (line) Personnel

b) What hours/shifts do combat personnel work?

24/48 (56 hour week) _____ 24/72 (42 hour
 week) _____
 10/14 (42 hour week) _____ Other (describe) _____

c) Number of Stations

d) Number of first line apparatus by type: (excluding
 reserves)

Engines _____ Trucks _____ Rescues _____ Other

e) Normal manpower staffing per vehicle:

Engines _____ Trucks _____ Rescues _____ Other

f) Minimum staffing per vehicle:

Engines _____ Trucks _____ Rescues _____ Other

g) Number of Other Personnel (Administrative, Support,
 Training, etc) _____

2. Population Protected _____

3. Square Miles Protected _____

4. Do you have a policy regarding the number of personnel
 required to be on the scene before interior firefighting
 operations begin?

- a. Yes If yes, please attach a copy of your policy.
- b. No

5. Do you allow an Engineer to leave their unit for interior operations?

- a. Yes
- b. No

6. Do you allow or require the Engineer to operate as part of a Rapid Intervention Team?

- a. Yes
- b. No

7. Has your agency entered into any type of agreement with another agency to accomplish the requirements of the Two-in/Two-out Rule?

- a. Yes
- b. No

Please fax your reply to Chief Robert Rogers at 407-860-7198.

Thank you for your time and assistance.

APPENDIX B

SURVEY RECIEPIENT

Alachua County Fire Rescue
Altamonte Springs Fire Department
Anna Maria Fire District
Arcadia Fire Department
Auburndale Fire Department
Bartow Fire Department
Bayshore Fire District
Belle Glade Fire Department
Belleair Bluffs Fire Department
Belleair Fire Department
Boca Grande Fire Control District
Boca Raton Fire Rescue Services
Bonita Springs Fire Control & Rescue District
Boynton Beach Fire Department
Braden River Fire District
Bradenton Fire Department
Broward County Fire Rescue
Bunnell Fire Department
Bushnell Department of Public Safety
Callaway Fire Department
Cape Coral Fire Department
Cedar Hammock Fire Control District
Charlotte County Fire & EMS Department
Citrus County Fire Department
City of MacClenny Department of Public Safety
City of Newberry
City of Perry Fire Department
City of Port Richey
City of Sarasota Public Safety
City of Starke Fire Department
City of Stuart Fire Rescue
Clay County Fire Rescue
Clearwater Fire Department
Cocoa Beach Fire Department
Cocoa Fire Department
Coconut Creek Public Safety
Coconut Creek Public Safety
Cooper City Fire Rescue
Coral Gables Fire Department
Coral Springs Fire Department
Crescent City Fire Department
Crestview Fire Department
Crystal River Fire Department
Dade City Fire Rescue
Dania Fire Rescue
Davenport Fire Department
Davie Fire Department

Daytona Beach Fire Department
Daytona Beach Shores Public Safety
Deerfield Beach Fire Department
Delray Beach Fire Department
Destin Fire Control District
Dover Turkey Creek Fire Department
Dunedin Fire Department
East Hernando County Fire Department
East Lake Fire Rescue, Inc.
Eatonville Fire Department
Edgewater Fire Rescue
Englewood Area Fire Control District
Eustis Fire Department
Fernandina Beach Fire Department
Flagler Beach Fire Department
Fort Lauderdale Fire Rescue & Building Department
Fort Myers Beach Fire Control District
Fort Myers Fire Department
Frostproof Fire Department
Golden Gate Fire Rescue District
Green Cove Springs Fire Department
Hanes City Fire & Rescue Department
Hardee County Fire Rescue
Hawthorn Fire-Rescue
Hialeah Fire Department
Hillsborough County Fire Department
Holly Hill Fire Rescue
Hollywood Fire Department
Immokalee Fire Control District
Indian River County Fire Department
Indian Rocks Fire District
Indiatlantic Fire Department
Iona McGregor Fire District
Isles of Capri Fire/Rescue
Jackson County Fire Rescue
Jacksonville Beach Fire Department
Jacksonville Fire & Rescue Department
Jasper Fire Department
Jefferson County Fire Rescue
Jensen Beach Fire Department
Key West Fire Department
Lake Alfred Fire Department
Lake City Fire Department
Lake County Fire & Emergency Services
Lake Mary Fire Department
Lake Panasoffkee Fire Rescue
Lake Park Fire Department

Lake Whales Fire Department
Lake Worth Fire Department
Lakeland Fire Department
Lantana Fire Rescue
Largo Fire Department
Lauderdale Lakes Fire Department
Lauderhill Fire Department
Lealman Fire Rescue
Lehigh Acres Fire Rescue District
Lighthouse Point Fire Rescue
Live Oak fire Department
Longboat Key Fire Rescue
Longwood Fire Department
Madison Fire Department
Magnolia Park Fire Department
Maidstone Fire Department
Maitland Fire Department
Marathon Fire & Rescue
Marco Island Fire Department
Margate Fire Rescue
Marianna Fire Department
Marion County Fire Department
Martin County Fire Rescue
Matlacha Pine Island Fire Rescue
Melbourne Fire Department
Metro-Dade Fire Rescue
Miami Beach Fire Department
Miami Fire/Rescue Department
Miramar Fire Rescue
Monroe County Fire Rescue
Mt. Dora Fire Department
Naples Police & Emergency Service
Nassau County Department of Public Safety
New Port Richey Fire & Emergency
New Smyrna Beach Fire Department
North Ft. Myers Fire Department
North Lauderdale Fire Department
North Naples Fire Department
North Palm Beach Fire Rescue
North Port Fire Rescue District
North River Fire District
Northwest Hernando County Fire Department
Oakland Park Fire Rescue
Ochopee Fire Control District
Ocoee Fire Department
Okaloosa Island Fire District
Okeechobee City Fire Department

Okeechobee County Fire Rescue
Oldsmar Fire Department
Orange City Fire Department
Orange County Fire Rescue Division
Orlando Fire Department
Ormond Beach Fire Department
Oveido Fire Rescue
Pahokee Fire Department
Palatka Fire Department
Palm Bay Fire Department
Palm Beach Fire Rescue
Palm Beach Gardens Fire Department
Palm Beach Shores Fire Department
Palm Coast Fire Rescue
Palm Harbor Fire District
Panama City Beach Fire Department
Panama City Fire Department
Pasco County Emergency Services
Pembroke Park Fire Department
Pembroke Pines Fire Department
Pensacola Fire Department
Pinellas County EMS & Fire Administration
Pinellas Park Fire Department
Plant City Fire Department
Plantation Fire Department
Poinciana Fire Department
Polk County Fire Department
Pompano Beach Fire Rescue
Ponce Inlet Fire Department
Ponte Verde Fire Rescue
Port Orange Fire Rescue
Punta Gorda Fire Department
Redington Beach Fire Department
Riviera Beach Fire Department
Rockledge Fire Department
Royal Palm Beach Fire Department
San Carlos Park Fire District
Sanford Fire Department
Sanibel Fire Control District
Sarasota County Fire Department
Satellite Beach Fire Department
Seminole County Department of Public Safety
Seminole Fire Rescue Department
Skyline Fire/Rescue District
South Pasadena Fire Department
South Walton Fire District
Southern Manatee Fire Rescue District

Spring Hill Fire Rescue
St. Cloud Fire Rescue Department
St. Lucie County - Fort Pierce Fire District
St. Petersburg Beach Fire Department
St. Petersburg Fire Department
Sunrise Fire Rescue
Suwannee County Fire Department
Tallahassee Fire Department
Tamarac Fire Department
Tampa Fire Department
Tarpon Springs Fire Department
Tavares Fire Department
Taylor County Fire Rescue
Temple Terrace Fire Department
Tice Fire & Rescue District
Titusville Fire & Emergency Services
Treasure Island Fire Department
Umatilla Fire Department
Union County Department of Emergency Services
United Fire District
Village of Key Biscayne Fire Rescue
Waldo Fire/Rescue Department
West Palm Beach Fire Department
West Side Fire Department
Whitfield Fire Control District
Wilton manors Fire Department
Winter Haven Fire Department
Winter Park Fire Department
Winter Springs Fire Department
Zephyrhills Fire Department

APPENDIX C
CITY OF DELTONA FIRE DEPARTMENT
STANDARD OPERATING PROCEDURES

CITY OF DELTONA FIRE DEPARTMENT STANDARD OPERATING GUIDELINE

Subject: Interior Structural Firefighting Safety Guidelines #2103
Two-In/Two-Out Rule

Effective: 10/01/98 Revised: 10/01/98 Pages: 5

Approved by Chief Robert L. Rogers

1.0 PURPOSE

The Deltona Fire Department often responds to incidents that present an unusually high risk to firefighter safety. This procedure identifies the requirements for the implementation of the OSHA and NFPA standards when an Immediately Dangerous to Life and Health IDLH exists.

2.0 RESPONSIBILITY

It shall be the responsibilities of all fire departments personal to be familiar wit this guideline.

3.0 REFERENCES

1. United States Department of Labor OSHA, 29 CFR 1910.134, pg-213, 1995. Pg-626
2. Federal Register, Vol. 63 No. 5 / Dated January 8, 1988, Rules and Regulations
3. NFPA 1500, 1992 Edition Amendments Reference 1-5, 6-4.1.1*, A-6-4.1.1
4. City of Fairfax Virginia Fire Rescue SOP 2.4.01
5. Volusia County Department of Fire Services Guideline: 107.001 Sept-97

4.0 DEFINITIONS

Interior Structural Fire fighting: “As the physical activity of fire fighting suppression, rescue or both inside of buildings or enclosed structures which are involved in a fire situation beyond the incipient stage.”

Working Structural Fire: As defined by National Fire Protection Association (NFPA) any fire that requires the use of a 1 1/2 inch or larger fire attack hose line that also requires the use of self-contained breathing apparatus (SCBA) for members entering the health hazardous area.

IDLH: Immediate Danger to Life and Health.

Immediately Dangerous to Life and Health IDLH Atmosphere: For this purpose, any area inside a structural fire that requires the use of a SCBA for protection from smoke; by-products of combustion or vapors; or particulate matter given off from any material; or oxygen deficient atmospheres.

Initial Stage of an incident: Includes the period of an incident where tasks are being undertaken by the first arriving company with only one team assigned or operating in the hazardous area.

Incipient Stage: As defined by OSHA "Fire which is in the initial or beginning stage and which can be controlled or extinguished by a portable fire extinguisher, Class II standpipe or small hose system without the need for protective clothing or breathing apparatus."

5.0 ATTACHMENTS

None

6.0 INDEX

None

7.0 PROCEDURES

7.01 At least four firefighters shall be assembled before initiating interior fire fighting operations at working structural fire. At any time during an incident the incident commander may request additional units/resources to maintain a safe emergency scene. On-scene operations shall be limited to those that can be safely performed by the personnel on the scene. This policy is intended to compliment the incidents commander's use of discretionary judgement.

7.01(a) The Two-in/Two out rule will be used whenever firefighters begin the interior attack on a structural fire. OSHA defines interior structural fire fighting "as the physical activity of fire suppression, rescue or both inside of buildings or enclosed structures which are involved in a fire situation beyond the incipient stage."

- 7.02 When a company arrives on the scene of a working structure fire as defined, (in 4.01 #2) an arrival/situation report shall be made over the radio and must include an accurate description of the conditions in the IDLH situation. The Operations Commander shall determine at that point if additional assistance is required, if not done so by the first arriving unit.
- 7.03 If a company arrives on the scene of a "working structural fire" with less than four persons being on the scene, the company must wait until four persons are assembled on the scene before initiating interior fire operations in an IDLH atmosphere. The four firefighters assembled for initial fire fighting operations can include any combination of firefighters arriving separately at the incident scene.
- 7.04 Firefighters operating in a hazard area at emergency incidents shall operate in teams of two or more. Personnel operating in an IDLH area, or engaged in interior structural fire fighting operations beyond the incipient stage, are required to wear SCBA and shall at not time enter the IDLH area alone. Firefighters operating in hazardous areas shall be in communication with each other through visual, audible, physical, safety rope, or electronic means. Firefighters must be in close proximity to each other to provide assistance in case of emergency. Firefighters should not rely on portable radio systems as the sole means of maintaining contact with team members.
- 7.05 During the initial stages of an incident, two (2) of the required four person's minimum on the scene must remain outside the hazardous IDLH atmosphere as Stand-by Team.
- 7.06 Members who arrive on the scene of a "working structure fire" prior to the assembling of the four persons shall initiate exterior actions in preparation for an interior attack. These may include, but are not limited to, actions such as the establishment of a water supply, shutting down the utilities, placement of ground ladders, the positioning of the attack line to the entrance of the structure or exposure protection.
- 7.07 Non High Rise Fires - When the first arriving unit is staffed with two (2) or three (3) persons, the company will operate in accordance with Section 7.03 until another member or unit arrives. The driver of the first unit and a member assigned by the officer of the second unit or by the Operations Commander will serve as the stand-by person.
- 7.08 One of the stand-by persons must provide constant awareness and maintain communications with the members of the interior team. This member is to be equipped with a portable radio. The other stand-by person is permitted to perform other duties outside of the hazardous IDLH atmosphere, such as Apparatus Operator, Incident Commander, and other positions.

- 7.09 The duties of this stand-by person must not interfere with his/her ability to perform duties of a stand-by person and assist in the event of an emergency. Any task that the outside firefighter(s) performs while in standby rescue status must not interfere with the responsibility to account for those individuals in the hazard area. Any task, evolution, duty, or function being performed by the individual must be such that the work can be abandoned, without placing any employee at additional risk, if rescue or other assistance is needed.
- 7.10 All firefighters engaged in interior structural fire fighting, and the stand-by crew must have full protective equipment necessary to enter a hazardous IDLH atmosphere. The stand-by crew shall have their protective clothing donned including helmet, jacket, bunker pants and boots with gloves and protective hood donned or with the clothing. The stand-by crew members will also have a SCBA and mask immediately accessible for rapid use in the event a rescue is required.
- 7.11 If the stand-by firefighters are required to enter the structure to rescue a team member(s), then the stand-by person must notify dispatch and any incoming units. Dispatch shall inform the responding chief officer of the actions being taken.
- 7.12 Any entry into an interior structure fire beyond the incipient stage, regardless of the reason, must be made in teams of two or more.

8.0 EXCEPTIONS

OSHA requires the fire department or fire department designee (i.e. incident commander) be notified prior to any rescue effort by fire fighters operating in an IDLH atmosphere. The fire department must provide any additional assistance appropriate to the emergency, including the notification of on-scene personnel and incoming units.

If, upon arrival at the scene firefighters find a situation where immediate action may prevent the loss of life or serious injury, such action shall be permitted with less than four (4) persons on the scene when conducted in accordance with normal size-up indicators and fire ground evaluation factors.

Any such actions taken in accordance with the "exception" provision shall be thoroughly reported in writing by the incident commander permitting the violation of this guideline. The detailed report shall be submitted to the Fire Chief and Safety Officer.

- 8.0(a) **Residential Occupancies:** In the absence of a report from a responsible person on the scene that everyone is out of the residence, it may be assumed that a life hazard exists however, this does not automatically allow for violation of this guideline. Factual

or reasonable evidence that a victim may exist must be established by the incident commander. The primary search will be conducted as soon as feasible.

- 8.0(b) **Business or Commercial Occupancies:** The company officer will have to evaluate the situation, considering the occupancy, time of day, day of the week, reports from people on scene, signs that people are in the structure.
 - 8.0(c) **Vacant or Abandoned Structures:** Entry into IDLH atmosphere with less than the minimum four (4) persons on the scene is not allowed unless there are clear signs or a report from a responsible person on the scene that people are in the structure.
- 8.01 When less than four (4) Firefighters are on scene, personnel should carefully evaluate the level of risk they would encounter before entering a structure. If this action is warranted, the person making the decision must include a detailed statement in the fire report describing the condition(s) that warranted such action. Entering a structure under the aforementioned circumstances might be warranted by one of the following situations:
- a. There is an imminent life-threatening situation; and,
 - b. Without immediate action loss of life or serious injury could occur.
- 8.02 The Two-In/Two-Out regulation does not require a separate "Two-Out" team for each team operating within the structure. However, if the incident escalates, accountability cannot be properly maintained from a single exposure, or if rapid rescue becomes infeasible, additional outside crews must be added. For example, if the involved structure were large enough to require entry at different locations or levels, additional "two-out" teams would be required.